

Appl. No. 09/275,722

Attorney Docket: 042390. P6526

REMARKS

The above referenced patent application has been reviewed in light of the Office Action, dated August 10, 2005, in which:

- claims 1-18 are rejected under 35 U.S.C. § 101 as having no utility;
- claim 19 is objected to because of a lack of antecedent basis;
- claims 1, 3-11, and 13-27 are rejected under 35 U.S.C. § 102(e) on Lotspiech *et al.* (hereinafter 'Lotspiech,' U.S. Patent No. 6,118,873);
- and claims 2 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lotspiech in combination with Luther (U.S. Patent No. 5,533,127).

Reconsideration of the above referenced patent application in view of the foregoing amendments and the following remarks is respectfully requested.

A Petition for Extension of Time in order to extend the period for response 2 month(s), including the appropriate fee, is filed herewith.

Claims 1-27 are now pending the above referenced patent application. No claims have been cancelled, amended, or added.

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1. Claim Objections

1.1. Claim 19

The PTO has objected to claim 19 because "there appears to be no antecedent basis for the limitation 'machine readable medium'". This objection is respectfully traversed.

M.P.E.P. § 2173.05(e) addresses a lack of antecedent basis.

2173.05(e) Lack of Antecedent Basis

A claim is indefinite when it contains words or phrases whose meaning is unclear. The lack of clarity could arise where a claim refers to "said lever" or "the lever," where the claim contains no earlier recitation or limitation of a lever and where it would be unclear as to what element the limitation was making reference. Similarly, if two different levers are recited earlier in the claim, the recitation of "said lever" in the same or subsequent claim would be unclear where it is uncertain which of the two levers was intended. A claim which refers to "said aluminum lever," but recites only "a lever" earlier in the claim, is indefinite because it is uncertain as to the lever to which reference is made. Obviously, however, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. *Ex parte* Porter, 25 USPQ2d 1144, 1145 (Bd. Pat. App. & Inter. 1992) ("controlled stream of fluid" provided reasonable antecedent basis for "the controlled fluid"). Inherent components of elements recited have antecedent basis in the recitation of the components themselves. For example, the limitation "the outer surface of said sphere" would not require an antecedent recitation that the sphere has an outer surface.

A CLAIM TERM WHICH HAS NO ANTECEDENT BASIS IN THE DISCLOSURE IS NOT NECESSARILY INDEFINITE

The mere fact that a term or phrase used in the claim has no antecedent basis in the specification disclosure does not mean, necessarily, that the term or phrase is indefinite. There is no requirement that the words in the claim must match those used in the specification disclosure. Applicants are given a great deal of latitude in how they choose to define their invention so long as the terms and phrases used define the invention with a reasonable degree of clarity and precision.

Applicant begins with claim 19. Claim 19 recites:

1 19. A machine readable medium having embodied thereon a computer program for processing by
2 a first digital platform including memory containing the computer program comprising:
3 an authentication function to recover an incoming key selection vector and to compute a
4 shared secret key based on a set of secret device keys stored in the first digital platform and the
5 contents of the incoming key selection vector;
6 a transfer function to output at least a key selection vector assigned to the first digital
7 platform;
8 a hash function to perform a hash operation on at least the shared secret key to produce a
9 resultant hash value; and
10 a comparison function to compare the resultant hash value with an incoming check hash
11 value received subsequent to the transmission of the key selection vector.

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Applicant respectfully asserts that antecedent basis for "machine readable medium" may be found in the first 3 words of line 1, "A machine readable medium".

Furthermore, Applicant asserts that the plain, dictionary meaning of the phrase renders the phrase sufficiently clear to overcome this objection. The phrase obviously means a medium which is able to be read by a machine. The American Heritage Dictionary of the English Language, 3rd ed., 1996 by Houghton Mifflin Company defines a "medium" as "an intervening substance through which something else is transmitted or carried on." It is, therefore, respectfully requested that the objection of this claim be withdrawn.

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2. 35 U.S.C. § 101

2.1. *Claims 1-18*

The PTO has rejected claims 1-18 are rejected under 35 U.S.C. § 101. This rejection by the PTO of these claims is respectfully traversed.

It is also respectfully noted that this rejection was raised and successfully overcome in the May 27, 2003 Office Action and subsequent Reply.

35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

M.P.E.P. § 2107.02 sets forth the standard for a § 101 rejection based upon utility:

2107.02 Procedural Considerations Related to Rejections for Lack of Utility

An Asserted Utility Creates a Presumption of Utility

In most cases, an applicant's assertion of utility creates a presumption of utility that will be sufficient to satisfy the utility requirement of 35 U.S.C. 101. See, e.g., *In re Jolles*, 628 F.2d 1322, 206 USPQ 885 (CCPA 1980); *In re Irons*, 340 F.2d 974, 144 USPQ 351 (CCPA 1965); *In re Langer*, 503 F.2d 1380, 183 USPQ 288 (CCPA 1974); *In re Sichert*, 566 F.2d 1154, 1159, 196 USPQ 209, 212-13 (CCPA 1977). As the Court of Customs and Patent Appeals stated in *In re Langer*:

As a matter of Patent Office practice, a specification which contains a disclosure of utility which corresponds in scope to the subject matter sought to be patented must be taken as sufficient to satisfy the utility requirement of § 101 for the entire claimed subject matter unless there is a reason for one skilled in the art to question the objective truth of the statement of utility or its scope.

Applicant respectfully asserts that the claims 1 & 11 result in a "shared secret key." One of the uses of the claimed invention is explicitly recited in the specification on page 3, lines 1-5.

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"[I]t would be desirable to develop a cryptographic technique that provides the security advantages of public key cryptography without the disadvantages of being cumbersome and computationally intensive." It is noted that the stated use is merely one of the possible uses for the "shared secret key," and the invention is not limited to the cited use. Applicant respectfully reiterates the directive of M.P.E.P. § 2107.02 "As a matter of Patent Office practice, a specification which contains a disclosure of utility which corresponds in scope to the subject matter sought to be patented must be taken as sufficient to satisfy the utility requirement of § 101 for the entire claimed subject matter."

It is respectfully asserted that the PTO has failed to support a proper § 101 rejection for a variety of reasons. Likewise, claims 2-10 and 12-18 are patentable for similar reasons. It is, therefore, respectfully requested that the rejection of these claims also be withdrawn.

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3. 35 U.S.C. § 102(b)

3.1. *Lotspiech: Claims 1, 3-11, and 13-27*

The PTO has rejected claims 1, 3-11, and 13-27 under 35 U.S.C. § 102(b) as being anticipated by Lotspiech. This rejection by the PTO of these claims is respectfully traversed.

It is well-established that in order to establish a *prima facie* case of anticipation under § 102 of the patent statute, the PTO must provide a single prior art document that alone has every element and every limitation of the claim being rejected. Therefore, if even a single element or limitation is not met by the asserted document, then the PTO has not succeeded in establishing a *prima facie* case.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicant begins with claim 1. Claim 1 recites:

1. A method comprising:
 providing a key matrix having N rows and M columns of matrix keys, where $N \geq 2$ and $M \geq 2$;
 dedicating the rows of the key matrix to a first classification;
 for each column of the key matrix, performing arithmetic operations utilizing matrix keys of at least two selected rows of the key matrix to produce a secret device key which is part of a first set of secret device keys;
 producing a shared secret key based on arithmetic operations on selected secret device keys of the first set of secret device keys.

It is respectfully asserted that, as just one example of how the text cited by the PTO fails to meet the language of the rejected claims, Lotspiech does not show, teach, use, or describe

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utilizing matrix keys of at least two selected rows of the key matrix to produce a secret device key. The PTO states that Lotspiech shows this feature on Column 5, lines 55-68, but Applicant respectfully asserts that Lotspiech does not show this.

Lotspiech, in Column 5, lines 55-68, describes the creation of the matrix illustrated by Lotspiech Fig. 5. An important thing to notice from Fig. 5 is that the elements (e.g. $E(x_1, s_{1,1})$) consist of results derived not from at least two rows of what the PTO contends is Lotspiech's key matrix (Fig. 3), but one element of the key matrix, $s_{1,1}$, and a session number, x_1 . See, Col. 5, line 60. It is respectfully asserted that if at least two rows were used the elements of Fig. 5 would consist of results derived from functions that require multiple key matrix elements as inputs, such as, for example, $E(x_1, s_{1,1}, s_{1,2})$. In contrast, Applicant's Fig. 5 illustrates taking multiple rows (three in the case of Fig 5) from the key matrix and using them to produce a secret device key, such as, for example, $2_SDKEY1 = K_{11} + K_{13} + K_{14}$, which is part of a first set of secret device keys. Therefore, it is respectfully asserted that Lotspiech fails to satisfy a *prima facie* case of anticipation as directed by 35 U.S.C. § 102.

Claims 3-11 and 13-27 either depend from claim 1, or include a substantially similar and patentably distinct limitation as claim 1. It is, therefore, respectfully requested that the rejection of these claims also be withdrawn.

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4. 35 U.S.C. § 103(a)**4.1. *Lotspiech and Luther: Claims 2 and 12***

The PTO has also rejected claims 2 and 12 under 35 U.S.C. § 103(a) based upon *Lotspiech* in combination with *Luther*. The rejection of these claims is respectfully traversed.

M.P.E.P. § 706.02(j) sets forth the standard for a § 103(a) rejection:

To establish a prima facie case of obviousness, three basic criteria must be met.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings.

Second, there must be a reasonable expectation of success.

Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (whitespace added).

Applicant begins with claim 2. Claim 2 recites:

1 (Original) 2. The method of claim 1, wherein the arithmetic operations include modular
2 addition.

Claim 2 ultimately depends upon claim 1. Claim 1 recites:

1 1. A method comprising:
2 providing a key matrix having N rows and M columns of matrix keys, where $N \geq 2$ and
3 $M \geq 2$;
4 dedicating the rows of the key matrix to a first classification;
5 for each column of the key matrix, performing arithmetic operations utilizing matrix keys
6 of at least two selected rows of the key matrix to produce a secret device key which is part of a
7 first set of secret device keys;
8 producing a shared secret key based on arithmetic operations on selected secret device
9 keys of the first set of secret device keys.

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Applicant respectfully asserts that the combination set forth by the PTO fails to meet the requirement for a *prima facie* case for a § 103(a) rejection for at least the following reasons.

It is respectfully asserted that neither Lotspiech nor Luther, either alone or in combination, suggests or describes utilizing matrix keys of at least two selected rows of the key matrix to produce a secret device key. See discussion above. It is, therefore, respectfully requested that the rejection of this claim be withdrawn.

Claims 12 either depends from and include the limitations of claim 2, or includes a substantially similar and patentably distinct limitation as claim 2. Therefore, these claims patentably distinguish from the cited patents on the same basis as claim 2. It is, therefore, respectfully requested that the PTO withdraw the rejections of these claims.

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CONCLUSION

In view of the foregoing, it is respectfully asserted that all claims pending in this application, as amended, are in condition for allowance. If the Examiner has any questions, they are invited to contact the undersigned at 503-264-7002. Reconsideration of this patent application and early allowance of all claims is respectfully requested.

Respectfully submitted,

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Justin B. Scout
Reg. No. 54,431

c/o Blakely, Sokoloff, Taylor & Zafman, LLP
12400 Wilshire Blvd., Seventh Floor
Los Angeles, CA 90025-1026
(503) 264-0967